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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,061	09/04/2001	Edgar Franklin Hoy	BT-001APCT	9658

7590

07/16/2003

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EXAMINER

METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/936,061

Applicant(s)

HOY, EDGAR FRANKLIN

Examiner

Daniel S. Metzmaier

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-21 and 23 is/are rejected.
- 7) ☒ Claim(s) 15, 22 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____    | 6) <input type="checkbox"/> Other:  |

### **DETAILED ACTION**

Claims 1-24 are pending.

#### ***Terminal Disclaimer***

1. The terminal disclaimer filed on January 24, 2003, Paper No. 6, disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 6,365,639 has been reviewed and is accepted. The terminal disclaimer has been recorded.

#### ***Oath/Declaration***

2. The corrected Declaration was received on January 24, 2003, Paper No. 7.

#### ***Specification***

3. The disclosure is objected to because of the following informalities: the cross-noting section of the specification should indicate "PCT/US01/00276, filed January 5, 2001, is a continuation of US 09/478,425, filed January 6, 2002, now issued as US Patent 6,365,639 B1.".

Appropriate correction is required.

#### ***Claim Objections***

4. Claims 15, 22 and 24 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claims 15, 22 and 24 have not been further treated on the merits.

#### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 1712

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-14, 16-21 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 18 and 21 do not define "xH<sub>2</sub>O" in said formula. Claims 1, 18 and 21 define "(n+n) is greater than or equal to 1".

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Norman et al., 3,948,809. Norman et al (examples, claims, and column 2, line 25) discloses the calcination of bauxite waste liquors after addition of sodium carbonate or sodium hydroxide at temperatures of 400° C to 900° C. Said disclosure reads on the compositions and processes.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1712

10. Claims 1-4, 7, 10, 14, 18-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burba, III et al., US 5,232,627, taken with Martin et al., US 5,728,363.

Burba, III et al '627 (column 2, lines 4 et seq; example 7; and claim 27) discloses making clay adducts with natural and synthetic hydrotalcites characterized as AHMMO. Said adducts are taught as rheological agents in aqueous compositions. Burba, III et al '627 (column 2, lines 16 et seq) discloses naturally occurring hydrotalcites contain some  $\text{CO}_2$  in its structure which when thermally dehydrated yields an active magnesium aluminum oxide compound or oxyhydroxide compound. Burba, III et al '627 (example 7) teaches the compositions characterized as clay adducts with spinals activated above  $500^\circ\text{C}$ . Burba, III et al '627 (column 4, lines 10 et seq) teaches formula which patentees disclosed as the crystalline mixed metal hydroxides (MMOH) used to create the mixed metal oxides or oxy-hydroxides (AHMMO) have a structure having a value of  $“(2m + 3n + qa + br)”$  equal to or more than 3.

Burba, III et al '627 differs from the claims in the lack of the explicit structure set forth in the instant claims having a value of  $“(2m + 3n + qa + br)”$  of less than 3. To the extent the Burba, III et al '627 AHMMO materials differ from the instantly claimed materials in the value of  $“(2m + 3n + qa + br)”$ , said materials would have been obvious to one having ordinary skill in the art at the time of applicant's invention as an oxy-hydroxide or as a known activated hydrotalcite additive known in the art.

Martin et al (abstract; columns 3 and 4; column 5, line 12; and examples) discloses methods of making hydrotalcites and hydrotalcite-like products and characterizes (column 1, lines 18 et seq) said hydrotalcites as layered double

Art Unit: 1712

hydroxides. Martin et al (column 5, line 12) discloses the hydrotalcites and hydrotalcite-like products are useful as viscosity/rheology control agents.

Martin et al differs from the claims in an explicit disclosure of an aqueous clay composition employing the Martin et al hydrotalcites.

These references are combinable because they teach calcined or activated hydrotalcites and associated structures. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ the calcined hydrotalcites of Martin et al in the compositions of Burba, III et al '627 as an obvious art known activated hydrotalcites as taught in the Martin et al reference.

Furthermore, it would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ the compositions of Burba, III et al '627 as art known viscosity/rheology control agent compositions which the Martin et al materials are taught to be useful.

11. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burba, III et al., US 5,232,627, taken with Martin et al., US 5,728,363, as applied to claims 1-4, 7 and 11 above, and further in view of Keilhofer et al., US 6,025,303, and/or either Watkins et al., US 4,580,633, or Wyganowski, US 5,036,915. Burba, III et al '627 and Martin et al viscosity/rheology control agents and compositions as set forth above.

Burba, III et al '627 and Martin et al differ from the claims in the further addition of aluminum oxide and the concentration thereof.

Keilhofer et al (column 1 and claims) discloses solid based compositions as viscosity/rheology control compositions employing activated hydrotalcites and as

Art Unit: 1712

component c) at least one solid base including aluminum trihydroxide.

These references are combinable because they teach viscosity/rheology control agents and compositions. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ an aluminum hydroxide as disclosed in the Keilhofer et al reference as a suitable base material for suitable pH modification.

Watkins et al (abstract; column 4, lines 10 et seq; and column 10, lines 31 et seq) teaches the addition of nitrogen containing compounds as viscosity modifiers in subterranean formations, which contain fines including montmorillonites as the most common material encountered. Watkins et al (column 10, lines 31 et seq) teaches suitable nitrogen compounds include ammonium ion precursors which are water-soluble and hydrolyse in steam such as urea and thiourea.

Wyganowski (abstract and columns 9 to 10, lines 66 to 20; and column 12, lines 38-50) teaches urea as a rheological for clay compositions and pH modifier.

These references are combinable because they teach rheological clays and additives employed to modify clay compositions and formations. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ urea or thiourea as a conventional additive in the Burba, III et al '627 compositions as a rheological or pH modifier for the clays therein.

***Allowable Subject Matter***

12. Claims 5-6, 8-9 and 16-17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

13. Applicant's arguments filed January 24 and May 7, 2003 have been fully considered but they are not persuasive.

14. Applicant (page 10 of the January 24, 2003 response) asserts the Norman et al compositions are used for a different purpose. This has not been deemed persuasive since the compositions have not been shown to otherwise be distinct.

Applicant (page 10) further asserts the use of bauxite waste effluents of Norman et al lack the Mg component to make the hydrotalcite or hydrotalcite-like materials. Claims 18 and 19 are not limited only to hydrotalcites or hydrotalcite-like materials.

Applicant (page 10) asserts Norman et al adds alkali metal carbvonnate, which is not required in the present claims. This has not been deemed persuasive since Norman et al (column 2, lines 14-19) teaches the alkali metal carbonate addition is not required. Furthermore, applicant's claims do not exclude the carbonate and the anion of said carbonate would presumable burn off during calcination.

Also, the Norman et al process fluids contain considerable hydroxide content, which are well known to absorb carbon dioxide from the air.

15. Applicant (pages 10 and 11) asserts the Norman et al reference employs the filtrate rather than the filtered solids employed in the instant process. Applicant has presented no evidence in support of their conclusion. Applicant discloses the use of HTC-GL, which is characterized as a green liquor from alkaline digestion of bauxite. The specification makes no mention of the use of filtered solids or a filtrate. Applicant's argument is not deemed persuasive since it lacks support for the conclusion for alleged



Art Unit: 1712

distinction. Norman et al (claims) employ materials containing aluminum oxide consisting essentially of naturally occurring bauxite or red mud waste product from aluminum plants.

16. Regarding the solubility of the product, the calcined products of Norman et al would have been expected to have been water insoluble.

17. Applicant (page 11) asserts the calcination temperature range is different and applicants have found unexpected results when calcinating at higher temperatures. Applicant's arguments have not been deemed persuasive since the calcinations temperature ranges overlap and the broad range is clearly envisaged in the Norman et al reference.

Applicant's argument of unexpected results has no probative value for an anticipation rejection.

18. Applicant (page 11) asserts their invention is unobvious over the Norman et al reference but no obviousness rejection has been set forth.

19. Applicant (pages 12-15) assert the Burba III et al '627 reference differs in the value  $(2m+3n+qa+br)$  is instantly less than 3 while Burba III sets forth a value of greater than or equal to 3. Said difference is acknowledged by the examiner.

Applicant further asserts that said difference is critical and denotes a different material than that of the prior art. While applicant asserts the materials are different based on the way said compounds are made, the claims are absent any recitation of the methods of making said materials and applicant does not distinguish the chemical

Art Unit: 1712

formula as set forth in Martin et al (column 3, lines 40 et seq, and column 4, line 55.

The Martin et al materials are taught to be useful in the same utility, viscosity control.

20. In response to applicant's argument that the aluminum oxide and/or nitrogen containing compounds are added for a different purpose in the Keilhofer and Wyganowski compositions than in applicant's, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

### ***Conclusion***

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (703) 308-0451. The examiner can normally be reached on 9:00 AM to 5:30 PM.

Art Unit: 1712

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on (703) 308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Daniel S. Metzmaier  
Primary Examiner  
Art Unit 1712

DSM  
July 14, 2003